

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 6 is requested to be cancelled.

Applicant respectfully submits that the disclosure of Applicant's application provides support for the amendments to the claims. For example, at least page 3, lines 28-36, of Applicant's specification provide support for the amendments to the claims.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1 and 10-32 are now pending in this application. Claims 22-24, 26, and 27 have been withdrawn from consideration.

Rejections under 35 U.S.C. § 103

Claims 1, 8, 9, 16, and 21

Claims 1, 6, 11, 15-18, 21, and 28-31 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over EP 0 163 471 to Fukuda *et al.* (hereafter "Fukuda") in view of GB 863,098. This rejection is respectfully traversed.

Fukuda relates to a descaling and lubricant coating process for a drawn wire rod that is preheated to a temperature of 80°C or higher and then pretreated in a solution at 70°C to 90°C and/or lubricated with a solution at 70°C to 90°C. See Fukuda at page 3, lines 33-38; page 4, lines 1-5; page 6, lines 29-38; page 7, lines 1-10; page 13, lines 8-37. Fukuda discloses that the wire rod is made of steel. See Fukuda at page 1, lines 3-7.

However, Fukuda does not disclose or suggest a process for producing surface-modified work pieces made from a metal and/or one or more alloys comprising, among other things, treating a workpiece with at least one modifying agent to obtain the surface-modified workpiece, wherein the metal and/or one or more alloys is at least one of aluminum, magnesium, copper, an aluminum-based, a magnesium-based, and a copper-based alloy, as recited in claim 1. Claims 6, 11, 15-18, 21, and 28-31 depend from claim 1. Fukuda does not disclose or suggest that the wire rod is made of aluminum, magnesium, copper, an aluminum-

based, a magnesium-based, or a copper-based alloy, as recited in claim 1. Instead, Fukuda discloses that the wire rod is made of steel.

GB 863,098 discloses a process for the formation of protective coatings on metallic surfaces by treating a preheated surface with an aqueous coating composition in the form of finely divided particles, such that the particles dry substantially in the position where they strike the surface to form a coating. See GB 863,098 at page 1, lines 14-17, 62-69. GB 863,098 discloses that the coating process can be used for metals made of iron, steel, zinc, copper, aluminum, magnesium, brass, bronze, and stainless steel.

However, GB 863,098 does not disclose or suggest that wire rod can be made of aluminum, magnesium, copper, an aluminum-based, a magnesium-based, or a copper-based alloy, as recited in claim 1, or that the process of GB 863,098 can be used for wire rod made of these materials.

Based on the disclosures of Fukuda and GB 863,098, one of ordinary skill in the art would modify the wire drawing process of Fukuda by the teachings of GB 863,098 to provide a process of drawing steel wire that has a protective coating. However, such a process does not involve a process for producing surface-modified work pieces made from a metal and/or one or more alloys made of at least one of aluminum, magnesium, copper, an aluminum-based, a magnesium-based, and a copper-based alloy, as recited in claim 1.

The Office states on page 2 of the Office Action that claim 6 is included in the rejection over Fukuda and GB 863,098. However, the Office provides no explanation of how the combination of Fukuda and GB 863,098 provide all of the features of claim 1, particularly since Fukuda regards the drawing of steel wire and GB 863,098 fails to remedy the deficiencies of Fukuda.

For at least the reasons discussed above, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 12-14 and 19

Claims 12-14 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fukuda and GB 863,098 in view of U.S. Patent No. 5,750,197 to van Ooij *et al.* (hereafter “van Ooij”). This rejection is respectfully traversed. Van Ooij fails to remedy the deficiencies of Fukuda and GB 863,098 discussed above in regard to independent claim 1,

from which claims 12-14 and 19 depend. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 10 and 25

Claims 10 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fukuda and GB 863,098 in view of U.S. Patent No. 2,809,423 to Hanink (hereafter “Hanink”). This rejection is respectfully traversed. Hanink fails to remedy the deficiencies of Fukuda and GB 863,098 discussed above in regard to independent claim 1, from which claims 10 and 25 depend.

Hanink discloses a brazing salt flux for joining aluminum, non-ferrous, and ferrous surfaces in which the parts to be joined are immersed in the molten salt and brazed within the salt flux. See Hanink at col. 1, lines 11-13, 21-27, and col. 2, lines 28-34, 41-60. However, one of ordinary skill in the art would not have modified the process of Fukuda and GB 863,098 by the teachings of Hanink because the process of Hanink relates to a fundamentally different process. As discussed above, Fukuda regards the wire drawing of steel wire. Fukuda and GB 863,098 do not disclose or suggest brazing.

One of ordinary skill in the art would not have modified the process of Fukuda and GB 863,098 by the teachings of Hanink because Fukuda and GB 863,098 do not disclose or suggest brazing. Nor would one of ordinary skill in the art have had a reasonable expectation of success that a brazed joint would withstand the forces encountered during a wire drawing operation, such as the substantial tensile forces applied to wire when it is pulled through a die, if one of ordinary skill in the art would have even considered a brazed joint in a wire drawing operation to cohesively join workpieces, as recited in claim 25, which Applicant does not concede. One of ordinary skill in the art that the processes of wire drawing and brazing are fundamentally different processes and would not have looked to the teachings of a brazing process when considering modifications to a wire drawing process.

The Office argues on page 3 of the Office Action that Hanink discloses a surface treatment enhancement. Hanink discloses a brazing operation that uses a salt flux and discloses that any salt solidified on relatively cold parts within the salt bath will remelt and return to the salt bath. See Hanink at col. 2, lines 50-55. The Office does not explain how the process of Hanink treats or enhances a surface, other than by brazing another surface to it.

The Office appears to suggest that because Hanink uses a salt flux in contact with the surface of a workpiece during brazing that it would have been obvious to modify the wire drawing process of Fukuda and GB 863,098 to braze wire. However, there is no suggestion in Fukuda and GB 863,098 that steel wires are brazed for a wire drawing process or that such a brazing operation could be successful.

For at least the reasons discussed above, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 20 and 32

Claims 20 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fukuda and GB 863,098 in view of “Thermal Modeling of Controlled Atmosphere Brazing Process Using Virtual Reality Technology” by Ratts *et al.* (hereafter “Ratts”). This rejection is respectfully traversed.

Ratts fails to remedy the deficiencies of Fukuda and GB 863,098 discussed above in regard to independent claim 1, from which claims 20 and 32 depend. As discussed above, the process of Fukuda and GB 863,098 regard an operation for drawing steel wire. Neither of these references regard a heat exchanger. The process of Fukuda and GB 863,098 manufactures wire, not a heat exchanger. The Office simply cites Ratts without explaining how the process of Fukuda and GB 863,098 can be modified by the teachings of Ratts to manufacture a heat exchanger, which is understandable since the process of Fukuda and GB 863,098 provides wire.

For at least the reasons discussed above, reconsideration and withdrawal of this rejection is respectfully requested.

Double Patenting

Claims 1, 6, 11-19, and 21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4-6, 17, and 19-32 of U.S. Application No. 11/576,918. Because this is a provisional rejection regarding another application currently being prosecuted, Applicant respectfully requests that this rejection be held in abeyance.

CONCLUSION

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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